

What is claimed is:

1. A system comprising:  
a computer having at least one power input connection and at least one I/O connection grouped into a first port;  
a docking station having at least one power output connection and at least one I/O connection grouped into a second port; and  
a cable having a first end connectable with the first port and a second end connectable with the second port, the cable providing an interconnection between the at least one power output connection of the docking station and the at least one power input connection of the computer, the cable providing interconnection between the at least one I/O connection of the computer and the at least one I/O connection of the docking station.
2. The system of claim 1, the at least one I/O connection comprising at least one of communication I/O and video connections.
3. The system of claim 2, the communication I/O connections comprising at least one of Ethernet, USB, and COM port communications.
4. The system of claim 2, the video connection comprising a video adapter output.
5. The system of claim 1, the computer comprising a first power supply and the docking station comprising a second power supply, the second power supply providing electrical power to the first power supply through the cable.
6. The system of claim 1, the power output connections and I/O connections of the docking station comprising conductors having first ends grouped together at the second port, the conductors having opposite second ends terminated with electrical connectors.

7. The system of claim 6, the electrical connectors grouping the second ends of the conductors of the docking station I/O connections to correspond with the I/O connections of the computer.

8. The system of claim 1, further comprising at least one module mountable in the docking station, the docking station comprising at least one I/O port connectable with I/O connections of the at least one module to provide communication between the at least one module and at least one device external to the docking station.

9. The system of claim 8, the I/O connections of the docking station comprising conductors having first ends grouped together at the second port, the conductors having opposite second ends connectable with the I/O connections of the at least one module to provide communication between the at least one module and the computer via the cable.

10. The system of claim 8, the modules comprising at least one of GPS modules, IEEE 1394 Firewire communications modules, RS-232 I/O modules, RS-422 I/O modules, RS-485 I/O modules, MIL-STD-1553 bus modules, USB I/O modules, internet modules, modem communication modules, wireless LAN modules, radio communication modules, video modules, voice activation modules, biometrics activation modules, dismountable equipment interface modules, and sensor interface modules.

11. The system of claim 8, wherein said at least one module comprises a plurality of modules that form a module stack mountable in the docking station, the modules in the module stack being interconnected to form a communication bus for providing communications between the modules.

12. The system of claim 11, wherein the communication bus of the module stack is formed through interconnection of bus connectors of adjacent modules, the module stack being expandable through stacking additional boards onto the stack,

the communication bus being expandable by interconnecting the bus connectors of the added modules to the bus connectors of adjacent modules in the module stack.

13. The system of claim 12, the modules comprise PC/104 modules.

14. The system of claim 8, the computer communicating with the at least one module in the docking station via the cable through at least one of Ethernet, USB, RS-232, RS-422, and RS-485 communications.

15. The system of claim 1, the docking station comprising at least one I/O port, the I/O connections of the docking station comprising conductors having first ends grouped together at the second port, the conductors having opposite second ends connectable with the at least one I/O port to provide a connection between the I/O connections of the computer and the at least one I/O port via the cable.

16. The system of claim 15, the second ends of the conductors being arranged in groups to correspond with the different types of I/O connections of the computer, the groups of second ends each being connectable with the at least one I/O port to provide a connection between an I/O connections of the computer and the I/O ports of the docking station.

17. The system of claim 16, each of the groups of second ends being terminated with an electrical connector, the I/O ports of the docking station each being terminated with electrical connectors, the electrical connectors of the groups of second ends being connectable with the electrical connectors of the I/O ports to provide connections between the docking station conductors and the I/O ports.

18. A system comprising:  
a docking station including a plurality of I/O ports, each I/O port being terminated with an I/O port connector;  
at least one module supported in the docking station, the at least one module having I/O connections terminated with module I/O connectors, the module I/O

connectors being connectable with a selected one of the I/O port connectors to configure the module I/O connections to communicate through the selected I/O port.

19. The system of claim 18, the I/O ports each including a plurality of conductors for transmitting I/O signals, each of the conductors being wired to its associated I/O port connector, the module I/O connections being selectively wired to the module I/O connectors to provide a desired communication path with an external device connected with the I/O port.

20. The system of claim 18, wherein said at least one module comprises a plurality of modules that form a module stack mountable in the docking station, the modules in the module stack being interconnected to form a communication bus for providing communications between the modules.

21. The system of claim 20, wherein the communication bus of the module stack is formed through interconnection of bus connectors of adjacent modules, the module stack being expandable through stacking additional boards onto the stack, the communication bus being expandable by interconnecting the bus connectors of the added modules to the bus connectors of adjacent modules in the module stack.

22. The system of claim 18, further comprising a computer including a power input connection and at least one I/O connection grouped into a first port, the docking station having a power output connection, at least one of the module I/O connections and the power output connection being grouped into a second port, the system further comprising a cable having a first end connectable with the first port and a second end connectable with the second port, the cable providing an interconnection between the power output connection of the docking station and the power input connection of the computer, the cable providing interconnection between the at least one I/O connection of the computer and the at least one of the module I/O connections.

23. A system comprising:  
a computer having at least one I/O connection provided to a first port;  
a docking station having a second port and at least one I/O port;  
a cable having a first end connectable with the first port and a second end connectable with the second port, the cable providing an interconnection between the at least one I/O connection of the computer and the second port of the docking station; and  
a connector for providing interconnection between the second port and a selected I/O port of the docking station to provide I/O from an external device connected to the selected I/O port to the at least one I/O connection of the computer via the cable.

24. The system of claim 23, the docking station I/O ports each including a plurality of conductors for transmitting I/O signals, each of the conductors being wired to an I/O port connector associated with the I/O port, the second port of the docking station including a plurality of conductors for transmitting I/O signals from the cable, the conductors of the second port being wired to second port connectors, the second port connectors being connectable with the I/O port connectors to provide an I/O path from an I/O port to an I/O connection of the computer via the cable.

25. A system comprising:  
a docking station including a plurality of I/O ports, each I/O port being terminated with an I/O port connector;  
a module stack supported in the docking station, the module stack comprising a plurality of modules having I/O connections terminated with module I/O connectors, the module I/O connectors being connectable with a selected one of the I/O port connectors to configure the module I/O connections to communicate through the selected I/O port.

26. The system of claim 25, the I/O ports each including a plurality of conductors for transmitting I/O signals, each of the conductors being wired to its

associated I/O port connector, the module I/O connections being selectively wired to the module I/O connectors to configure a desired communication path with an external device connected with the I/O port.

27. The system of claim 25, wherein the modules in the module stack are interconnected to form a communication bus for providing communications between the modules.

28. The system of claim 27, wherein the communication bus of the module stack is formed through interconnection of bus connectors of adjacent modules, the module stack being expandable through stacking additional boards onto the stack, the communication bus being expandable by interconnecting the bus connectors of the added modules to the bus connectors of adjacent modules in the module stack.

29. The system of claim 25, further comprising a computer including a power input connection and at least one I/O connection grouped into a first port, the docking station having a power output connection, at least one of the module I/O connections and the power output connection being grouped into a second port, the system further comprising a cable having a first end connectable with the first port and a second end connectable with the second port, the cable providing an interconnection between the power output connection of the docking station and the power input connection of the computer, the cable providing interconnection between the at least one I/O connection of the computer and the at least one of the module I/O connections.

30. The system of claim 29, the computer communicating with the at least one module in the docking station via the cable through at least one of Ethernet, USB, RS-232, RS-422, and RS-485 communications.

31. A method for configuring a computer system comprising the steps of:  
providing a computer having a power input connection and at least one I/O connection

grouping the power input connection and I/O connections of the computer into a first port;

providing a docking station having a power output connection and at least one I/O connection

grouping the power output connection and I/O connections of the docking station into a second port;

connecting a first end of a cable with the first port of the computer; and

connecting a second end of the cable with the second port of the docking station, the cable providing an interconnection between the power output connection of the docking station and the power input connection of the computer, the cable providing interconnection between the at least one I/O connection of the computer and the at least one I/O connection of the docking station.

32. The method of claim 31, the power output connections and I/O connections of the docking station comprising conductors, the method further comprising the steps of grouping first ends of the conductors at the second port and terminating second ends of the conductors with electrical connectors to correspond with different types of the I/O connections of the computer.

33. The method of claim 31, further comprising the steps of:

providing at least one module mountable in the docking station;

providing the docking station with at least one I/O port connectable with I/O connections of the at least one module to provide communication between the at least one module and at least one device external to the docking station.

34. The method of claim 33, the I/O connections of the docking station comprising conductors, the method comprising the steps of grouping first ends of the conductors at the second port, and connecting second ends of the conductors with the I/O connections of the at least one module to provide communication between the at least one module and the computer via the cable.

35. The method of claim 33, wherein step of providing at least one module comprises providing a plurality of modules configured in a module stack, the method further comprising the steps of interconnecting bus connectors of adjacent modules to form a communication bus of the module stack.

36. The method of claim 35, further comprising the steps of stacking additional boards on the module stack to expand the module stack, and interconnecting the bus connectors of the added modules to the bus connectors of adjacent modules in the module stack to expand the communication bus of the module stack.

37. The method of claim 33, further comprising the step of providing communication between the computer and the at least one module in the docking station via the cable through at least one of Ethernet, USB, RS-232, RS-422, and RS-485 communications.

38. A method for configuring a computer system comprising the steps of:  
providing a docking station including a plurality of I/O ports;  
terminating each I/O port with an I/O port connector;  
providing at least one module supported in the docking station, the at least one module including I/O connections;  
terminating the I/O connections of the module with module I/O connectors;  
and  
connecting the module I/O connectors with selected ones of the I/O port connectors to selectively associate the module I/O connections with a particular I/O port.

39. The method of claim 38, the I/O ports each including a plurality of conductors for transmitting I/O signals, the method further comprising the steps of wiring each of the conductors to its associated I/O port connector, and selectively wiring the module I/O connections to the module I/O connectors to configure a desired communication path with an external device connected with the I/O port.



40. The method of claim 38, further comprising the steps of:  
providing a computer including a power input connection and at least one I/O connection;  
grouping the at least one I/O connection into a first port;  
grouping at least one of the module I/O connections and a power output of the docking station into a second port;  
connecting a first end of a cable with the first port and connecting a second end of the cable with the second port to provide an interconnection between the power output connection of the docking station and the power input connection of the computer, and to provide interconnection between the at least one I/O connection of the computer and the at least one of the module I/O connections.

41. The method of claim 40, further comprising the step of providing communication between the computer and the at least one module in the docking station via the cable through at least one of Ethernet, USB, RS-232, RS-422, and RS-485 communications.

42. A method for configuring a computer system comprising the steps of:  
providing a computer having at least one I/O connection linked to a first port;  
providing a docking station having a second port and at least one I/O port;  
connecting a first end of a cable with the first port;  
connecting a second end of the cable with the second port to provide an interconnection between the at least one I/O connection of the computer and the second port of the docking station; and  
interconnecting the second port and a selected I/O port of the docking station with a connector to provide I/O from an external device connected to the selected I/O port to the at least one I/O connection of the computer via the cable.

43. The method of claim 42, the docking station I/O ports each including a plurality of conductors for transmitting I/O signals, the second port of the docking

station including a plurality of conductors for transmitting I/O signals from the cable, the method further comprising the steps of:

- wiring each of the conductors to an I/O port connector associated with the I/O port;

- wiring the conductors of the second port to second port connectors; and

- connecting the second port connectors with the I/O port connectors to configure an I/O path from an I/O port to an I/O connection of the computer via the cable.